Space Weather Forecast

Issued on Saturday, 13 April 2024 at 13:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Minor/Moderate geomagnetic storm G1/G2 likely, peak Monday 15 April. Daily chance of Moderate-class X-ray flares.

Solar Activity: Solar activity has become Moderate, with a single Moderate-class flare, peaking 13/0502 UTC from a small region in the southeast. There are now seven sunspot groups on the visible disc. Three spots have shown minor increases in size and complexity and the others remain generally unchanged. Two small spots have rotated around the southwest limb, one of which is the source of the aforementioned flare.

No further Earth-directed coronal mass ejections have been detected.

Solar Wind / Geomagnetic Activity: Solar winds showed a slow regime. The solar wind speed ranged from slow-ambient to slightly elevated. The interplanetary magnetic field was weak and very steady, while the north-south component was weak with an erratic tendency. Resultant geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate solar activity is expected, with a chance of further Moderate flares and a slight chance of Strong flares throughout.

Solar Wind / Geomagnetic Activity: Two potential Earth-directed coronal mass ejections feature in the forecast, one expected to arrive later on 14 Apr and the other early on 15 Apr. Otherwise, the slow-ambient solar winds may become slightly elevated from late 13 Apr should any coronal hole fast wind arrive.

Geomagnetic activity is forecast to increase from Quiet levels to perhaps become Active from later 13 Apr from the onset of a coronal hole fast wind. Then, a Chance of G1/G2 Minor/Moderate geomagnetic storms late 14 Apr, rising into 15 Apr due to two inbound corona mass ejections, especially if any arrivals combine. Activity should then ease back to mainly Quiet to Unsettled levels through 16 Apr.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	50	70	5
Strong	G3	No	1	10	10	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	50	50	50	50
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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